

Title: LONG-TERM MEASUREMENT OF PHYSICAL, CHEMICAL, AND BIOLOGICAL WATER COLUMN PROPERTIES IN THE SOUTH FLORIDA COASTAL ECOSYSTEM.

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Project Summary: This proposal would continue coordinate measurements of coastal physics, biology, and chemistry and analytical interpretation of the coupled local, regional, and remote processes influencing the transport and exchange of South Florida coastal waters and their suspended or dissolved constituents. It is specifically responsive to SFP 2004 announcement topics (B) Water Quality, (C) Circulation and Physical Oceanography, (D) Fisheries and Protected Resources, and (E) Florida Keys Habitat Characterization, and will provide specific information to the Comprehensive Everglades Restoration Plan (CERP), to the Florida Bay/Florida Keys Feasibility Study, and to the Florida Keys National Marine Sanctuary (FKNMS). RSMAS participation in this project will be conducted through CIMAS, Task 3, Theme 3: Coastal Ocean Processes.

At this point in time, researchers are being called upon not only to continue to improve and enhance understanding of Florida Bay and the coastal systems with which it is connected, but also to contribute to the adaptive management of South Florida Ecosystem Restoration (SFER). As part of that process, NOAA has committed to providing specific information to the multi-decadal CERP Monitoring and Assessment

Plan (MAP) (available at [http://www.evergladesplan.org/pm/recover/recover\\_map\\_2004.cfm](http://www.evergladesplan.org/pm/recover/recover_map_2004.cfm)). The proposed large ship and small boat survey plans have been modified and redesigned to maximally complement the South Florida Water Management District (SFWMD) and Miami-Dade Department of Environmental Resources Management (DERM) coastal water quality monitoring. The fixed instrument array will be expanded to include the Dry Tortugas, and this region will receive additional attention in the large ship survey and drifter deployment plans. An adaptive, nested sampling scheme will be employed to supplement fixed temporal and spatial monitoring. Real-time satellite and in-situ moored data will be utilized to schedule and guide field measurements, and continuous synoptic data will be used to guide post-cruise sample analysis and interpretation. Every effort will be made to accommodate other investigators aboard the large ship and small boat cruises to the synergistic benefit of all parties concerned. Emphasis will be given to rapid dissemination of the data to the user community via the SFP program web site ([www.aoml.noaa.gov/sfp/](http://www.aoml.noaa.gov/sfp/)).

The objectives of the proposed continuation are to: 1) measure the transport coupling the Gulf to the Atlantic through the southwest Florida shelf and Florida Keys including the Dry Tortugas; 2) measure the advection and dispersion of freshwater discharging on the southwest Florida shelf and directly into Florida Bay; 3) describe the physical processes controlling transport and exchange of plant nutrients, suspended sediments and biological particulates (plankton); 4) determine the circulation and water property patterns within Florida Bay and the surrounding coastal areas on monthly to inter-annual time scales with opportunistic inclusion of the critical “event” scale; 5) improve understanding of recruitment pathways into Florida Bay and the southwest Florida shelf mangrove zone nursery grounds for shrimp fish and lobster larvae; 6) provide data needed to support and validate NOAA’s regional hydrodynamic model, a component of the interagency modeling program supporting the Florida Bay/Florida Keys Feasibility Study; and 7) fulfill specific NOAA obligations to CERP.

Relevance to  
Restoration and/or  
Resource  
Management:

Data derived from this project will help assist CERP’s Florida Bay/Florida Keys Feasibility Study (FBFKFS) circulation and water quality modelers in model verification and validation.

Geographic Area:

South Florida coastal waters.